SNBP International & Sr. Secondary School, Chikhali, Pune.
Affiliation No. 1130703
Academic session 2024-25
Notes-(Term-2)
Sub-math

Prepared by -Pranjali Patil   L-10 Metric Measures

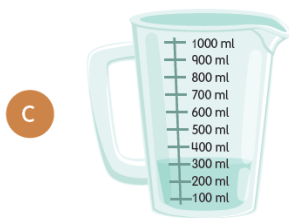Pre- activity-Solve let's begin in the textbook.

Concrete Stage

Use the 'Place Value Counters' and make a conversion chart to solve the following.

a) 4500 ml = | 4.5 | l   b) 4000 cm = | 40 | m

c) 6595 m = | 6.595 | km   d) 7 km = | 7000 | m

e) 6389 g = | 6.389 | kg   f) 253 cm = | 2.53 | m

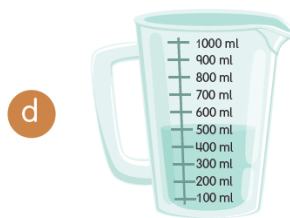## Pictorial Stage

What value do the following labelled pictures represent? Write them in two different units.
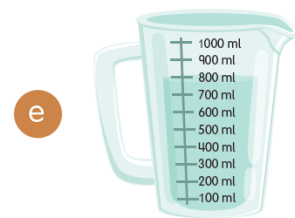
a)

1 kg   1.5 kg   2 kg

| 1.9 kg | | 1900 g |

b)

0 km   0.5 km   1 km

| 0.3 km | | 300 m |

c   300 ml

0.3 l

d   500 ml

0.5 l

e   800 ml

0.8 l

Abstract Stage

1   **Convert the following units of length as stated.**

a   25 m   =   25000 mm   b   80 m   =   8000 cm

c   6 km   =   6000 m   d   15 m   =   15000 mm

e   22.5 cm   =   225 mm   f   5.4 m   =   5400 mm

g   9.89 km   =   9890 m   h   4.63 km   =   4630 m

2   **Convert the following units of capacity as stated.**

a   8 l   =   8000 ml   b   3 l 360 ml   =   3360 ml

(c) 6 kl 250 l = 6250 l   (d) 65 ml = 0.065 l

(e) 65 kl 345 l = 65345 l   (f) 5 kl 35 l = 5350 l

(g) 36 kl 5 l = 36500 l   (h) 2.8 kl = 2800 l

5 Convert the following units of mass as stated.

(a) 4 kg = 4000 g   (b) 8.5 kg = 8500 g

(c) 2.84 kg = 2840 g   (d) 3.560 kg = 3560 g

(e) 13 kg 235g = 13235 g   (f) 9 kg 85 g = 9850 g

(g) 6340 g = 6340 g   (h) 5460 mg = 5.46 g

Abstract Stage

1 Add the following by changing in the same units.

(a) 4 m 20 cm, 6 m 80 cm, 4 m 20 cm = 15.2 m

(b) 40 km 40 m, 20 km 200 m, 10 km 900 m = 71.14 km

(c) 5 kg 500 g, 3 kg 850 g, 4 kg 750 g = 14.10 kg

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2 Subtract the following by changing in the same units.

(a) 30 m 20 cm from 45 m 80 cm = 15.6 m

(b) 40 l 450 ml from 45 l 400 ml = 4.95 l

(c) 10 kg 500 g from 12 kg 300 g = 1.8 kg

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Concrete Stage

Use the number line to complete the following table.

	Departure time (hrs)	Arrival time (hrs)	Number line	Duration of journey
a	11:55	13:17		1 hour 22 min
b	00.35	03:51		4 hours 16 min
c	19:49	22:11		2 hours 22 min
d	23:01	02:49		3 hours 48 min

Pictorial Stage

Calculate the time intervals and match them.

Departure time	Arrival time		Time interval
pm	pm		i. 7 hours 14 min
am	pm		ii. 4 hours 22 min
am	am		iii. 82 min
pm	pm		iv. 2 hours 54 min

Abstract Stage

1. A school organised a tour to Jaipur. The students left Delhi at 7:00 a.m. on Friday and returned on Sunday at 6:00 p.m. Find the duration of their trip.

   Answer: 59 hrs.

2. Rahul left home for the office at 8:30 a.m. and returned home at 6:00 p.m. If he takes 45 minutes one way from home to office, find the time he spent at the office.

   Answer: 8 hrs.

3. Two friends started racing on the track. The first one started at 8 hours 10 min 20 seconds and finished at 8 hours 16 minutes 25 seconds. The second friend started at 8 hours 13 minutes 25 seconds and finished at 8 hours 19 minutes 45 seconds. Who finished earlier and by how much time?

   Answer: The first friend finished earlier by 15 seconds.

4. Riya's school starts at 8:15 a.m. and closes at 3:40 p.m. Find the working hours of her school.

   Answer: 7 hrs. 25 min.

5 A medical shop opens at 9:30 am and closes at 8:00 pm. How long does the shop remain open?

Answer: 10 hrs. 30 min.

6 A train left New Delhi at 5:40 p.m. on Monday and reached Bengaluru on Thursday at 12:30 p.m. Find the total duration of the journey.

Answer: 66 hrs. 50 min.

Think Aloud

**1** 10 years make 1 decade, 10 decades make 1 century, and 10 centuries make 1 millennium.

Place them all on place value cards and discuss in the class.

Answer: 10 years = 1 decade

100 years = 10 decades = 1 century

1000 years = 100 decades = 10 centuries = 1 millennium

2 A man went cycling from Mumbai to Delhi, Delhi to Kolkata, Kolkata to Chennai, and Chennai to Mumbai as shown in the figure. Find out when did he return home, if he had left Mumbai on the 1st of January 2005 at 8:00 a.m. His friend finished cycling the same distance exactly 24 hours before him. When did his friend come back to Mumbai?
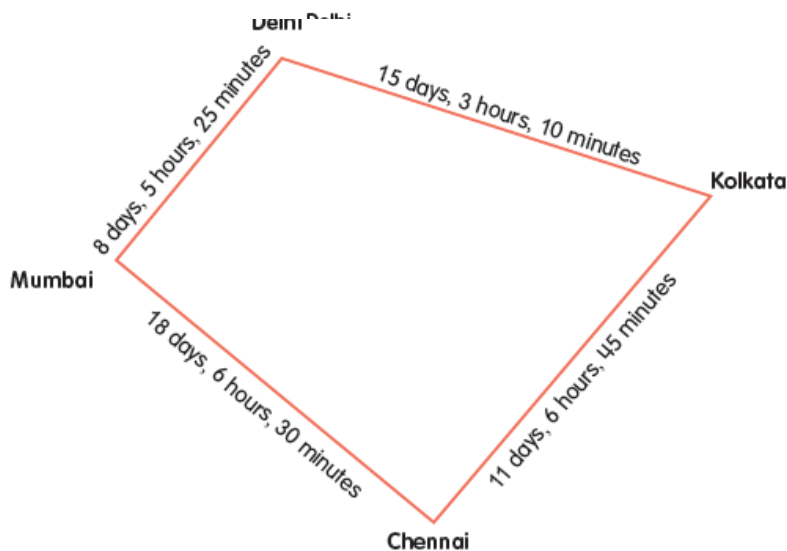
Answer: The man did return home on 23 February at 5:50 a.m. And his friend came back to Mumbai on 22 February at 5:50 a.m..

Blooming Questions

1 Convert the following units as stated below.

a 8.6 km = __8600__ m   **b** 7.25 m = __725__ cm

c 888 g = __0.888__ kg   **d** 3540 ml = __3.54__ l

e 100.5 l = __100500__ ml   **f** 30 cm = __0.3__ m

g 253 cm = __2.53__ m   **h** 3.5 cm = __35__ mm

i 7.03 m = __703__ cm   **j** $212\frac{1}{2}$ kg = __212500__ g

2 Solve the following as stated.

a Add 20 l 250 ml, 30 l 650 ml, 4 l 200 ml = 55.10 l

b Add 3 m 600 mm, 4 m 400 mm, 6 m 350 mm = 1435 cm

c Subtract 40 m 20 cm from 45m 15 cm = 4.95 m

d Subtract 4 km 400 m from 8 km 200 m = 3.8 km

3 Circle the most appropriate unit to measure the following items.

Item	Measure	Item	Measure
a (juice glass)	(200 ml) / 500 ml / 1 litre	(apple)	500 g / (100 g) / 1000 g
b (backpack)	1 kg / (5 kg) / 10 kg	(watermelon)	20 kg / (3 kg) / 100 kg
c (cricket bat)	(900 mm) / 90 mm / 9 m	(table)	(10 kg) / 100 kg / 1000 kg
d (soap)	3 kg / 200 gram / (10 gram)	(glass of water)	1 litre / (300 ml) / 500 ml

4 Work out the following number stories using RUCSAC.

a Priyank walked 18 km 300 m towards east. From there, he walked 12 km 450 m towards north to reach home. Find out the total distance travelled by him.

Answer: 18.3 km + 12.45 km = 30.75 km

(b) In the Kala Khatta syrup, AB juice company adds 2 l 500 ml black berry syrup, 1 l 250 ml lemon juice, and 1 l 500 ml sugar concentrate. Find the total volume of Kala Khatta syrup.

Answer: 2.5 l + 1.25 l + 1.5 l = 5.25 l

(c) A plant is increasing 6 cm in height every month. How tall will it grow in 3 months? Work out your answer in mm.

Answer: To convert 18 cm in mm, 18 x 10 = 180 mm

(d) Garvika had a doctor's appointment. She took 1 hour 20 minutes to reach the clinic from her home, 45 minutes of waiting period, 30 minutes for the doctor's treatment, and 1 hour 10 minutes to return home. How much time in all did she spend out of her house?

Answer: 3 hrs. 45min.

(e) A sailor went on sailing around the world. He left on 1-1-2004 and returned on 31-1-2005. Find the number of days he was sailing.

Answer: He was sailing 398 days.

5. Rashi was out of station for 45 days and came back on the 1st of June. When had she left?

Answer: Rashi left on 17th of April.

6 Calculate and complete the table.

Item No.	Item Name	Base metric measure	centi	kilo	milli
1	sugar	300 g	30000 cg	0.3 kg	300000 mg
2	rope	25 m	2500 cm	0.025 km	25000 mm
3	rice	300 g	30000 cg	0.3 kg	300000 mg
4	oil	50 l	5000 cl	0.05 kl	50000 ml
5	ghee	250 g	25000 cg	0.25 kg	250000 mg
6	dal	120 g	12000 cg	0.12 kg	120000 mg

7 Look at the table below, and answer the questions that follow.

Stop	Bus 1	Bus 2	Bus 3	Bus 4	Bus 5	Bus 6
Stop A	20:08	20:18	20:28	20:38	20:48	21:08
Stop B	20:33	20:43	20:53	21:03	21:13	21:33
Stop C	20:43	20:53	21:03	21:13	21:23	21:43
Stop D	20:58	__	21:18	__	21:38	__

a How long is the journey from Stop A to Stop B?
Answer: 25 min

b If Elan is at Stop A at five past 8, what time will she arrive at Stop D?
Answer: If Elan is at Stop A at five past 8 (I.e., 8:05), she will arrive at Stop D at 20:58.

c When will Elan be able to reach Stop C if she arrives at Stop A at half past eight? Which bus she will board? Why?
Answer: Elan will reach Stop C at 21:13 if she arrives at Stop A at half past eight. She will board Bus 4. Because after half past eight (I.e., 8:30) Bus 4 will come first.

Post activity- What is the distance from school to your house? Write in KM and convert it into M.

S. Teacher   H.O.D.   Co-Ordinator   Principal